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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,388	04/09/2004	Candice Helen Brown Ellison	08831.0068	1598
42304	7550	03/01/2006	EXAMINER	
CLAIRVOYANTE, INC. 874 GRAVENSTEIN HIGHWAY SOUTH, SUITE 14 SEBASTOPOL, CA 95472			RAHMJOO, MANUCHER	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/821,388	BROWN ELLIOTT ET AL	
	Examiner	Art Unit	
	Mike Rahmjoo	2676	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.135(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 02 February 2006.

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-14 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/2/06

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____

U.S. Patent and Trademark Office
PTOL-326 (Rev. 7-05)

Office Action Summary

Part of Paper No./Mail Date 021606

Application/Control Number: 10/821,388
Art Unit: 2676

Page 2

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities:

As per claim 1 line 5 recites "...image data to be rendered...". It is not clear if any data is rendered or not.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallagher et al (US Patent 6856704), hereinafter, Gallagher, in view of Murdoch et al, (US PAP 2004/ 0263528), hereinafter, Murdoch.

As per claim 1 and as to the broadest reasonable interpretation by examiner, Gallagher teaches inputting image data to be rendered on said display see for example fig. 2 for the color data input; converting said image data from said first color space to image data of said second color space see for example fig. 2 and column 5 lines 45- 50 for color input to a luminance/chrominance converter 10 in order to generate a

Application/Control Number: 10/821,388
Art Unit: 2676

Page 3

luminance digital image channel and two chrominance digital image channels (corresponding to first color space) and column 6 lines 40- 45 for the conversion back into RGB data (second color space); and sharpening the subpixel rendered image data with the luminance signal see for example fig. 2 block 20.

However, Gallagher does not teach subpixel rendering each individual color plane.

Murdoch teaches subpixel rendering each individual color plane see for example figures 6 and 8 and paragraph [0072].

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Murdoch into Gallagher to further provide precision to pixel formations and their subsequent color channels and therefore produce a desired spatial arrangement on the screen which enhances image display quality and provides consumer satisfaction see for example page 2, paragraph [0012- 0013].

As per claim 2 Gallagher teaches one of RGB, SRGB, and YCbCr see for example fig. 2 and column 5 lines 45- 50 for color input to converter 10 in order to generate a luminance digital image channel and two chrominance digital image channels (corresponding to first color space) and column 6 lines 40- 45 for the conversion back into RGB data (second color space).

As per claim 3 Murdoch teaches RGBW see for example paragraph [0012].

As per claims 4 and 13 Murdoch broadly teaches constructing filter kernals from area resampling and finding a reduced set of filters according to reconstruction

Application/Control Number: 10/821,388
Art Unit: 2676

Page 4

symmetries see for example paragraphs [0072- 0073] for resampling data from a format with a color signal at every spatial location to a pattern that includes a white subpixel. Murdoch also broadly teaches sampling and resampling from three to four color transformations in paragraphs [0059- 0060].

As per claims 5 and 12 Murdoch broadly teaches mapping luminance image data onto said white subpixels comprising one of a group of tent filter, box filter, unity filter, box-cubic filter, tent-cubic filter through mapping of intensity values for all four primary color channels see for example paragraph [0036] for the mapping of intensity values to all four primary color channels.

As per claim 6 Murdoch broadly teaches mapping the chrominance data onto said plurality of colored subpixels see for example paragraph [0036] for gamut mapping (broadly corresponding to mapping chrominance data) onto subpixel values.

As per claim 7 Murdoch broadly teaches shifting the phase of at least one color plane to interstitial positions of said colored subpixels see for example paragraph [0050- 051] for the shifting of the RGB color values by adding and removing of constants and also paragraph [0043] for changes with respect to hue and paragraph [0076] for the color adjustment broadly corresponding to phase shifting of a color plane.

As per claims 8 and 10- 11 Murdoch broadly teaches sharpening at least one color plane with luminance data, cross color sharpening and self sharpening said chrominance data see for example fig. 2 block 20 and paragraph [0043] for changes with respect to hue and paragraph [0076] for the color adjustment.

Application/Control Number: 10/821,388

Page 5

Art Unit: 2676

As per claim 9 Gallagher teaches sharpening with a difference of gaussian filter see for example column 8 lines 25- 55.

As per claim 14 Murdoch broadly teaches applying corrections for offset positions see for example paragraphs [0064- 0065] for the spatial offset to the color data in the horizontal and vertical directions.

Response to Arguments

Applicant's arguments with respect to claim 1- 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure; Us Patent 5828792 and 6807315

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Application/Control Number: 10/821,388
Art Unit: 2676

Page 6

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Application/Control Number: 10/821,388
Art Unit: 2676

Page 7

Inquiry

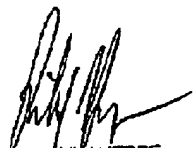
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is 571-272-7789. The examiner can normally be reached on 8 AM- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Rahmjoo

February 17, 2006



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,383	04/09/2004	Candice Hellen Brown Elliott	08831.0068	1598

42304 7590 08/02/2005

CLAIRVOYANTE, INC.
874 GRAVENSTEIN HIGHWAY SOUTH, SUITE 14
SEBASTOPOL, CA 95472

EXAMINER

RAHMJOO, MANUCHER

ART UNIT PAPER NUMBER

2675

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/821,388	BROWN ELLIOTT ET AL	
	Examiner	Art Unit	
	Mike Rahmjoo	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

U.S. Patent and Trademark Office
PTOL-326 (Rev. 1-04)

Office Action Summary

Part of Paper No./Mail Date 032405

Application/Control Number: 10/821,388
Art Unit: 2676

Page 2

DETAILED ACTION

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1- 44 of U.S. PAP 2004/ 0196297. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

As per claim 1 U.S. PAP 2004/ 0196297 teaches inputting image data to be rendered on said display (transmission of pre- subpixel data to the display); converting said image data from said first color space to image data of said second color space and subpixel rendering each individual color plane (ordered pre-subpixel rendered data set which may be converted back to conventionally ordered RGB color space to be displayed on an electronic display). Currently claim 1 is broader than

Application/Control Number: 10/821,388
Art Unit: 2676

Page 3

claims 1- 44 of US PAP 2004/ 0196297..

Claims 2- 14 are substantially similar to claims 1- 44 of U.S. PAP 2004/ 0196297.

See also MPEP § 804.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1- 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 1 line 1 recites "...display substantially comprising...". Use of the word "substantially" makes the claim language indefinite.

As per claim 12, line 2 recites "...one of a group comprising...". Examiner is at loss what is being referred to "a group". Is it the individual filters or is it the combination of the filters which is being referenced as "a group".

Claims 2- 11 and 12- 14 are indefinite because they depend on indefinite antecedent claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Application/Control Number: 10/821,388

Page 4

Art Unit: 2676

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Murdoch et al (US PAP 2004/ 0263528), hereinafter, Murdoch.

As per claim 1 Murdoch teaches inputting image data to be rendered on said display see for example paragraph [0060]; converting said image data from said first color space to image data of said second color space see for example paragraph [0025] for conversion from three color into four color; subpixel rendering each individual color plane see for example paragraphs [0025] and [0060].

As per claim 2 Murdoch teaches one of RGB, SRGB, and YCbCr see for example paragraph [0012] and [0025].

As per claim 3 Murdoch teaches RGBW, RGBW+L, RGBCW+L, RGBMW+L see for example paragraphs [0038] and [0056].

As per claims 4 and 13 and as to the broadest reasonable interpretation by examiner, Murdoch teaches constructing filter kernels from area resampling and finding a reduced set of filters according to reconstruction symmetries see for example paragraphs [0059- 0060] for sampling and resampling.

As per claims 5 and 12 and as to the broadest reasonable interpretation by examiner, Murdoch teaches mapping luminance image data onto said white subpixels comprising one of a group of tent filter, box filter, unity filter, box-cubic filter, tent-cubic filter through mapping of intensity values for all four primary color channels see for example paragraph [0036].

Application/Control Number: 10/821,388
Art Unit: 2676

Page 5

As per claim 6 Murdoch inherently teaches mapping the chrominance data onto said plurality of colored subpixels see for example paragraph [0036].

As per claim 7 Murdoch inherently teaches shifting the phase of at least one color plane to interstitial positions of said colored subpixels see for example paragraphs [0043] for the changes with respect to hue and [0076] for the color adjustment and fig. 2.

As per claims 8 and 10- 11 and as to the broadest reasonable interpretation by examiner, Murdoch teaches sharpening at least one color plane with luminance data, cross color sharpening and self sharpening said chrominance data see for example paragraphs [0043] for changes with respect to hue and [0076] for the color adjustment.

As per claim 9 and as to the broadest reasonable interpretation by examiner, Murdoch teaches sharpening with a difference of gaussian filter see for example paragraph [0002].

As per claim 14 Murdoch teaches applying corrections for offset positions see for example paragraph [0064- 0065].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US PAP 2004/ 0196297, 2002/ 0015042, 2004/ 0145599, 2005/ 00944871, and 2005/ 0099426.

Application/Control Number: 10/821,388
Art Unit: 2676

Page 6

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is (571) 272-7789. The examiner can normally be reached on 6:30- 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272- 7778. The fax phone number for the organization where this application or proceeding is assigned is (571) 273- 8300 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Mike Rahmjoo

July 26, 2005



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600